Liquid Turbine Flow Transmitter

FFM05

| Introduction |

Liquid flows through the turbine housing causing an internal rotor to spin. As the rotor spins, an electrical signal is generated in the pickup coil. This signal is converted into engineering units(Liters, cubic meters, gallons etc.)on the local display where is applicable. Optional accessory modules can be used to export the signal to other equipment.

Applications:

Petroleum / Chemical engineering /
Electric power and machinery fields

| Specification |

Measured value	Flow rate, Volume flow
Medium	Liquid：Water；Diesel, etc.(without impurity, low viscosity, flow conditions similar to EN 29104)
Temperature	+10 ... +30°C / +50 ... +86°F
Output	Pulse, 4 … 20 mA(Option：Local display+4 ... 20 mA)
Accuracy	0.5% of rate(Optional：0.2%)
Diameter	DN4 … DN200
Measuring ratio	Standard-10：1；Optional-20：1
Inlet section	≥10 DN
Operating pressure	1 bar
Installation conditions	Inlet run≥10 DN；Outlet run≥5 DN
	Take care that flow sensor is always fully filled
Flow direction	Forward
	Arrow on flow sensor indicates flow direction

Connection	Thread	DN4 … DN50(External)；DN15 … DN50(Internal)
	Flange(Optional)	ANSI / JIS

Operating conditions	Process temperature	-20 ... +80°C / -20 ... +150°C
	Ambient temperature (All versions)	Standard(with aluminum converter housing)：20 … +55°C
	Storage temperature	-20 ... +70°C
	Pressure	Thread：63 bar(DN4 … DN15) / 25 bar(DN20 … DN50)
		Flange：16 bar
		ANSI：150 Ib RF
		JIS：10K

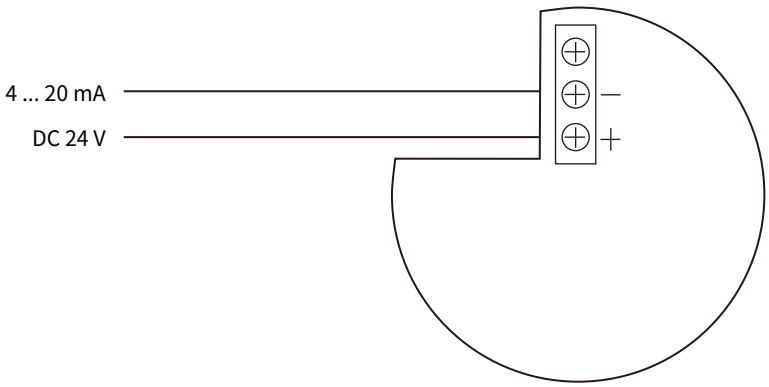
Material	Housing	SS304(Optional：SS316)
	Flanges	SS304
	Rotor	2Cr13(Optional：Duplex impeller)
	Bearings and shafts	Tungsten carbide
	Display meter	Standard：Polyurethane coated die-cast aluminum

| Measurable Flow Rate Range |

Note：The flow range as blow is for reference only. Consult the factory if you have special requirement.

Nominal diameter		Standard flow range	Extended flow range	External thread
(mm)	(in.)	(m^3/h)	(m^3/h)	
4	0.15	0.04... 0.25	0.04... 0.4	G 1/2
6	0.25	0.1... 0.6	0.06... 0.6	G 1/2
10	0.4	0.2... 1.2	0.15... 1.5	G 1/2
15	0.5	0.6... 6	0.4... 8	G 1
20	0.75	0.8... 8	0.45... 9	G 1
25	1	1... 10	0.5... 10	G 1 1/4
32	1.25	1.5... 15	0.8... 15	G 1 1/2
40	1.5	2... 20	1... 30	G 2
50	2	4... 40	2... 40	G 2 1/2
65	2.5	7... 70	4... 70	—
80	3	10... 100	5... 100	
100	4	20... 200	10... 200	
125	5	25... 250	13... 250	
150	6	30... 300	15... 300	
200	8	80... 800	40... 800	

| Diagram |



| Ordering Guide |

FFM05 - [Diameter] [Output] [Accuracy] [Range] [Materials] [Connection] - [Optional]

Diameter
- 04：DN4
- 06：DN6
- 10：DN10
- 15：DN15
- 20：DN20
- 25：DN25
- 32：DN32
- 40：DN40
- 50：DN50
- 65：DN65(Flange only)
- 80：DN80(Flange only)
- 100：DN100(Flange only)
- 125：DN125(Flange only)
- 150：DN150(Flange only)
- 200：DN200(Flange only)

Output
- N：Pulse
- A：4 ... 20 mA
- B：Display+4 ... 20 mA

Accuracy
- 05：0.5% of reading
- 02：0.2% of reading

Range
- S：Standard flow range
- W：Extended flow range

Materials
- S：S.S.304
- L：S.S.316

Connection
- GM：External thread：DN4 ... DN50(G1/2” ... G2 1/2”)
- FJ：Flange JIS 10K(S.S.304)
- FA：Flange ANSI 150#(S.S.304)

Optional
- H：-20 ... +150°C(High Temp.)
- K：Impeller(Duplex)
- W：Customized

| Additional Option (ILAC / TAF) Test Report |

Additional option：(ILAC / TAF)Test report - Standard calibration laboratory(TAF accreditation：3032, complying with ISO / IEC 17025)
TAF has mutual recognition arrangement with ILAC MRA

Project	Measurand level or range
Flow meters	Flow rate：2.4 ...30 m^3/h(40.0 ... 500.0 L/min)
	Flow velocity：0.2 ... 3 m/s
	8 basic points(8 basic points on average or specified by customer)